Pornampai (Ping-Ping) Narenpitak

NOAA Chemical Sciences Laboratory
325 Broadway R/CSL9, Boulder, CO 80305
+1 (303) 497-5241 • pornampai.narenpitak@noaa.gov

CURRENT POSITION

January 2020 – Present
Professional Research Associate
Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado Boulder and
NOAA Chemical Sciences Laboratory (CSL), Boulder, CO
Clouds, Aerosol, & Climate Group

EDUCATION

December 2019
Ph.D., Atmospheric Sciences
University of Washington, Seattle, WA
Research Advisor: Christopher S. Bretherton
The Certificate of **Candidate in Philosophy** received in June 2018
Dissertation Topic:
Intrinsic predictability and sensitivity of tropical cyclogenesis to moisture perturbations in near-global aquaplanet cloud-resolving simulations

March 2017
M.S., Atmospheric Sciences
University of Washington, Seattle, WA
Thesis Topic:
Cloud feedbacks in limited-area and near-global cloud-resolving simulations of an aquaplanet in the System of Atmospheric Modeling

May 2014
**B.S., Atmospheric and Oceanic Sciences
& Applied Mathematics**
University of Wisconsin-Madison, Madison, WI

PUBLICATIONS

Narenpitak, P., C. S. Bretherton, and M. F. Khairoutdinov (2020), The role of multiscale interaction in tropical cyclogenesis and its predictability in near-global aquaplanet cloud-resolving simulations, *J. Atmos. Sci,* doi: 10.1175/JAS-D-20-0021.1.

Narenpitak, P., and C. S. Bretherton (2019), Understanding negative subtropical shallow cumulus cloud feedbacks in a near-global aquaplanet model using limited-area cloud-resolving simulations, *J. Adv. Model. Earth Syst.,* doi: 10.1029/2018MS001572.

Narenpitak, P., C. S. Bretherton, and M. F. Khairoutdinov (2017), Cloud and circulation feedbacks in a near-global aquaplanet cloud-resolving model, *J. Adv. Model. Earth Syst.,* 9, 1069–1090, doi: 10.1002/2016MS000872.

PRESENTATIONS & MEETING PARTICIPATIONS (*Presenter/Speaker)

*__Narenpitak, P.__, C. S. Bretherton, M. F. Khairoutdinov, J. Kazil, T. Yamaguchi, P. Quinn, G. Feingold (October 2020), Tropical cyclogenesis predictability and shallow cumulus organization from the perspective of multiscale processes, MMM Seminar, Mesoscale & Microscale Meteorology Laboratory, National Center for Atmospheric Research (NCAR), Boulder, CO, USA (Virtual Seminar).

*__Narenpitak, P.__, J. Kazil, T. Yamaguchi, G. Feingold (April 2020), Progress report: The comparison of "Sugar" trade cumuli in ERA5 Reanalysis and SAM simulations near Barbados. Oral presentation at the First Atlantic Tradewind Ocean–Atmosphere Mesoscale Interaction Campaign (ATOMIC) Teleconference, Virtual Meeting.

*Bretherton, C. S., **P. Narenpitak**, and M. F. Khairoutdinov (August 2019), Are tropical cyclones unexpectedly predictable? Oral presentation at the Latsis Symposium 2019, High-Resolution Climate Modeling: Perspectives and Challenges: Organized Together with the 3rd GEWEX Workshop on Convection-Permitting Climate Modeling, ETH Zurich, Switzerland.

*__Narenpitak, P.__, and C. S. Bretherton (October 2018), Understanding negative subtropical shallow cumulus cloud feedbacks in a near-global aquaplanet model using limited-area cloud-resolving simulations. Poster presented at the 2018 Cloud Feedback Model Intercomparison Project (CFMIP) Meeting on Clouds, Precipitation, Circulation, and Climate Sensitivity, National Center for Atmospheric Research (NCAR), Boulder, CO, USA.

*Bretherton, C. S., **P. Narenpitak**, and M. F. Khairoutdinov (January 2018), The interplay of tropical convection, moisture, and vorticity. Oral presentation at the David J. Raymond Symposium, 2018 American Meteorological Society (AMS) Annual Meeting, Austin, TX, USA.

*__Narenpitak, P.__, and C. S. Bretherton (July 2017), Understanding negative subtropical shallow cumulus cloud feedbacks in a near-global aquaplanet model using limited-area cloud-resolving simulations. Poster presented at the Gordon Research Conference: Radiation and Climate, Lewiston, ME, USA.

*__Narenpitak, P.__, C. S. Bretherton, and M. F. Khairoutdinov (December 2016), Cloud and circulation feedbacks in a near-global aquaplanet cloud-resolving model. Poster presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA, USA.

RESEARCH INTERESTS

- Mesoscale organization of shallow cumuli
- Shallow cumulus and stratocumulus cloud feedbacks
- Genesis, intensification and predictability of tropical cyclones

- Tropical convection and precipitation extreme
- Developments of cloud-resolving and large-eddy simulations
- Climate and energy public policies
- Ethics and sciences of geoengineering
- Machine learning (clustering, neuron networks, decision trees)

HONORS & AWARDS

2010 – 2019	Royal Thai Government Scholarship, Ministry of Science and Technology, Thailand
2013	Lettau-Wahl Award, Department of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison
2012	L. R. Ingersoll Prize, Department of Physics, University of Wisconsin-Madison

RESEARCH EXPERIENCES

June 2015 – August 2019 **Graduate Research Assistant**, Department of Atmospheric Sciences, University of Washington, Seattle, WA
- Organized and analyzed big data, particularly results from near-global high-resolution simulations
- Developed a tropical cyclone tracking algorithm using machine learning
- Examined the genesis and evolution of tropical cyclones, and their predictability, using cloud-system resolving simulations
- Examined the impacts of increased sea surface temperature and greenhouse gases on radiation, climate and clouds; special focus on marine shallow cumulus
- Improved stratocumulus cloud representations in large-eddy simulations
- Experiences with high-performance computing and running numerical atmospheric models: The System of Atmospheric Modeling (SAM) and Geophysical Fluid Dynamic Laboratory's Atmospheric Model (GFDL AM2.1)

June - August 2013 **Consultant**, NASA DEVELOP National Program, Huntsville, AL
- Monitored hemlock forest loss and advanced mitigation practices against the invasive hemlock woolly adelgid
- Monitored land-use/land-cover change for decision support in Chittagong Hill Tracts, Bangladesh
- Utilized NASA Earth Observations and remote sensing techniques

TEACHING EXPERIENCES

February 2019   **Volunteer Tutor**, Introduction to Python
- Developed a curriculum on programming for students with backgrounds in humanity and social science
- Taught Python and basic statistics for beginners

January – March 2016   **Teaching Assistant**, Weather, University of Washington
- Designed class activities and developed problem sets for assignments and examinations
- Led weekly lecture review and discussion sections for 4 groups of 30 students
- Graded quizzes and homework

2015 – 2017   **Participant**, Tropical Meteorology reading group, University of Washington
- Led quarterly small-group discussions based on published papers

PROFESSIONAL & UNIVERSITY SERVICE

March 2020 – Present   Ad-Hoc Reviewer, Journal of Geophysical Research: Atmospheres

July 2017 – Present   Ad-Hoc Reviewer, Journal of Advances in Modeling Earth Systems

2014 – 2019   Atmospheric Sciences Outreach Writer, Personal Blog
- Wrote educational articles about atmospheric sciences and other relevant scientific concepts in Thai

2014 – 2016   Volunteer, UW Atmospheric Sciences Outreach
- Created short, educational videos about scientific concepts relevant to atmospheric sciences
- Spoke at science outreach events for grade-school students

2014   Forecaster, UW Atmospheric Sciences Outreach
- Provided weather forecasts for the Ocean Adventure Rowing & Education (OAR) Northwest during their outreach journey as they rowed along the Mississippi River
- Collaborated with other meteorologists and communicated with the OAR Northwest rowing team

COMPUTER SKILLS

Programming: Python, Matlab, Fortran, Java
Operating Systems: Linux, Macintosh, Microsoft Windows

LANGUAGE SKILLS

English (fluent)
Thai (native)
Lao (proficient)
Mandarin Chinese (intermediate)